

CLAIMS:

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a1
1. A radiation sensitive composition comprising a resin composition and a radiation sensitive material, wherein the resin composition comprises two or more kinds of resins, further where the resins have a difference in refractive index of at least 0.03.

2. The radiation sensitive composition according to claim 1, wherein the resin composition comprises (a) a resin component comprising an alkali-soluble resin and (b) a resin additive comprising a resin which has the different refractive index of 0.03 or more relative to that of the resin of the resin component.

3. A radiation sensitive composition comprising a resin composition and a radiation sensitive material, wherein the resin composition comprises at least (a) a resin component of an alkali-soluble resin and (b) a resin additive of a resin working as a dissolution inhibitor and the radiation sensitive material is (c) a radiation sensitive material containing a quinonediazide group.

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a2
4. The radiation sensitive composition according to claim 2, wherein the resin additive is at least one selected from polyacrylic ester, polymethacrylic ester, polystyrene derivatives, a copolymer obtained from at least two monomers selected from acrylic esters, methacrylic esters and styrene derivatives, and a copolymer obtained from at least one of these monomers and an organic acid monomer having a carboxyl group or a carboxylic anhydride

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group.

5. The radiation sensitive composition according to claim 4, wherein a copolymer obtained from at least one monomer selected from acrylic esters, methacrylic esters and styrene derivatives and an organic acid monomer having a carboxyl group or a carboxylic anhydride group has an acid value of 1 to 80 mg KOH/g.

6. The radiation sensitive composition according to claim 4, further comprising a polymer-containing 50 mole-% or more of a repeating unit having a carboxyl group or a carboxylic anhydride group.

7. The radiation sensitive composition according to claim 2, wherein the dissolution rate in 2.38 weight-% aqueous tetramethylammonium hydroxide of the radiation sensitive composition is not more than 5000 Å/min.

8. The radiation sensitive composition according to claim 2, wherein when the resin containing styrenic monomer-repeating units of less than 50 mole-% of repeating units in the resin is used as the resin additive, the weight average molecular weight of the resin is 7,000 to 20,000 as determined by polystyrene standards and when the resin containing styrene derivative-repeating units of not less than 50 mole-% of repeating units in the resin is used as the resin additive, the weight average molecular weight of the resin is 3,000 to 25,000 as determined by polystyrene standards.

9. The radiation sensitive composition according to

claim 4, wherein the value of X which is B/A is in the range of 0.01 to 0.13 whereupon A is an integrated area beneath peaks in the range of 7.2 to 5.6 ppm and B is an integrated area beneath peaks in the range of 1.3 to 0.95 ppm in a ¹H-NMR spectrum of a solution of the resin composition in heavy acetone.

10. The radiation sensitive composition according to claim 2, wherein the resin component is novolak resin.

11. The radiation sensitive composition according to claim 10, wherein the weight average molecular weight of the novolak resin is 3,000 to 15,000 as determined by polystyrene standards.

12. The radiation sensitive composition according to claim 1, wherein when a resin containing styrenic monomer-repeating units of less than 50 mole-% of repeating units in the resin is used as the resin additive, the amount of the radiation sensitive material is 1 to 20 parts by weight relative to 100 parts by weight of the alkali-soluble resin in the radiation sensitive composition and when a resin containing styrenic monomer-repeating units of not less than 50 mole-% of repeating units in the resin is used as the resin additive, the amount of the radiation sensitive material is 10 to 30 parts by weight relative to 100 parts by weight of the alkali-soluble resin in the radiation sensitive composition.

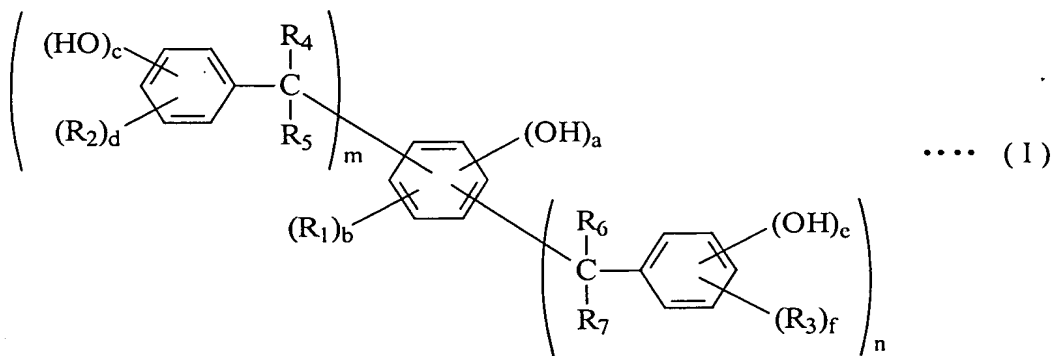
13. The radiation sensitive composition according to claim 12, wherein when the resin containing styrenic

monomer-repeating units of less than 50 mole-% of repeating units in the resin is used as the resin additive, the amount of the radiation sensitive material is 1 to 18 parts by weight relative to 100 parts by weight of the alkali-soluble resin in the radiation sensitive composition.

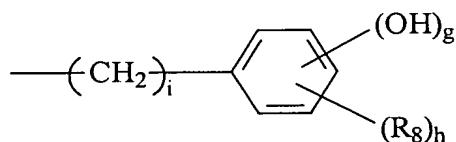
14. The radiation sensitive composition according to claim 2, wherein when a resin containing styrenic monomer-repeating units of less than 50 mole-% of repeating units in the resin is used as the resin additive, the content of the resin additive is 1 to 20 parts by weight relative to 100 parts by weight of novolak resin of the alkali-soluble resin and when a resin containing styrenic monomer-repeating units of not less than 50 mole-% of repeating units in the resin is used as the resin additive, the content of the resin additive is 0.5 to 5 parts by weight relative to 100 parts by weight of novolak resin of the alkali-soluble resin.

15. The radiation sensitive composition according to claim 1, further comprising a low molecular compound having phenolic hydroxyl group or groups represented by the general formula (I):

add ab



wherein R_1 , R_2 , R_3 , R_4 , R_5 , R_6 and R_7 each represents independently H, a C_1 to C_4 alkyl group, a C_1 to C_4 alkoxy group, a cyclohexyl group or a group represented by the formula:



wherein R_8 represents H, a C_1 to C_4 alkyl group, a C_1 to C_4 alkoxy group or a cyclohexyl group; each of m and n is 0, 1 or 2; each of a , b , c , d , e , f , g and h is 0 or an integer of 1 to 5 satisfying $a + b \leq 5$, $c + d \leq 5$, $e + f \leq 5$, and $g + h \leq 5$; and i is 0, 1 or 2.